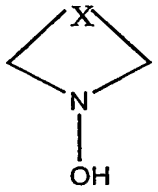
CLAIMS

1. A polymerisation inhibitor comprising a non-hindered cyclic hydroxylamine either alone or in combination with an additional inhibitor.

2. A polymerisation inhibitor as claimed in claim 1, wherein the non-hindered cyclic hydroxylamine is cyclic hydroxylamine having no alkyl or other alpha substituents adjacent the hydroxylamine group. Preferred compounds have the formula (1).



(1)

wherein X is a group selected from: $(CH_2)_mY(CH_2)_n$ wherein m and n are each independently an integer from 0 to 5 and Y is a CH_2, or a hetero atom eg O, S or NH and wherein one or more CH_2 is optionally substituted with one or more C_1-C_5 alkyl groups; $-(CH_2)_r-CH = CH-(CH_2)_s-$ wherein r and s are independently integers from 0 to 3, optionally substituted with one or more C_1-C_5 alkyl groups.

3. A polymerisation inhibitor as claimed in claim 2, wherein they hydroxylamine is selected from the group consisting of: 1-hydroxypiperidine, 4-hydroxymorpholine, 1-hydroxypyrrolidine, 1-hydroxyazetidine, 1-hydroxy-2,5-dihydropyrrole, 1-hydroxyhexamethyleneimine, 1-hydroxyazocan.

4. A polymerisation inhibitor as claimed in claim 2, wherein the hydroxylamine is selected from the group consisting of partially saturated aromatic bi or tricyclic unhindered hydroxylamines and mixtures thereof.

5. A polymerisation inhibitor as claimed in claim 4, wherein the hydroxylamine is selected from the group consisting of: 1-hydroxy-2,3,4-trihydroquinoline, 9-hydroxycarbozole and 1-hydroxy-2,3-dihydroindole, optionally substituted with one or more $C_1 - C_5$ alkyl groups, and mixtures thereof.

6. A polymerisation inhibitor as claimed in claim 3, wherein the hydroxylamine is selected from the group consisting of: 1-hydroxypiperidine, 4-hydroxymorpholine and mixtures thereof.

7. A polymerisation inhibitor as claimed in any preceding claim, wherein the co-inhibitor is selected from the group consisting of nitrophenols, substituted nitrophenols and stable free-radicals.

8. A polymerisation inhibitor as claimed in claim 7, wherein the inhibitor is selected from: 2,4-dinitrophenol, 2-sec-butyl-4,6-dinitrophenyl, 4-hydroxy tempo, 4-oxo tempo, 4-amino tempo, t-alkylcatechols, t-alkylhydroxyquinones, benzoquinones, and p-phenylene diamines.

9. A polymerisation inhibitor as claimed in claim 7 or 8, wherein the amount of co-inhibitor is in the range from a trace to 96% by weight of the total amount of inhibitor.

10. A polymerisation inhibitor as claimed in claim 9, wherein the amount of co-inhibitor is 40 to 96% by weight of the total amount of inhibitor.

11. A polymerisation inhibited composition comprising a monomer and an inhibitor as claimed in any preceding claim.

12. A method of inhibiting polymerisation during production, purification, storage or use of a vinyl α-olefin, acrylic, conjugated diene or other ethylenically unsaturated monomer comprising the step of addition to the monomer of a polymerisation inhibitor as claimed in any of claims 1 to 10.